

TRAINING METHODOLOGY IN POWERBUILDING

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Abstract

By powerbuilding we mean the practice of physical activities linked to the Bodybuilding and Powerlifting training methodology, a recently interesting sports activity for athletes who carry out fitness activities by training with overloads. The analysis of the variables making up the training and the impact in terms of effectiveness, represented by the effort index perceived by the athlete, allow setting a correct programming to improve the athlete's outcomes. The graphs represented highlight the training variables and the final table lead the athlete towards an operational methodology aiming at the practical execution and periodization of the exercises to be included in the practical activities. The study of training variables can be a scientifically interesting starting point to improve the quality of training.

Key words: powerbuilding, physical activity, training, variables, effectiveness, periodization.

Introduction

Power bodybuilding, or Powerbuilding, is a discipline that mixes bodybuilding and powerlifting. People who practice it aim not only at developing a harmonious and muscular body, but also a high physical strength, in particular in the 3 powerlifting lifts: squat, deadlift and bench press. This hybrid discipline invites to set an adequate training planning with similarities concerning both activities. There are differences between a pure Bodybuilder (BB) and a Power-bodybuilder (Androulakis-Korakakis, 2018; Colquhoun, 2017; Ferland & Comtois, 2019; Garhammer, 1993; Stetsenko, 2016). When choosing the exercises, the BB employs both basic and single-joint exercises to train muscle groups from different perspectives, and to work on less-trained ones.

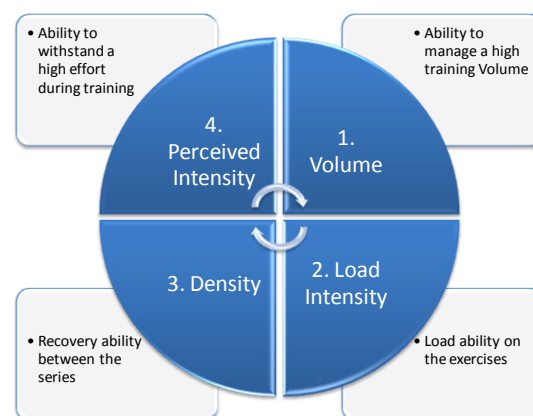
A Powerbb, instead, employs more exercises like the 3 big lifts and their variants, thus focusing more on kinetic chains rather than on muscles. From the point of view of the training frequency, a BB can train both in multifrequency and in mono-frequency, trying to train also once a week on each muscle group. As for the dimension of exercises repetitions, a BB can range from a low to a high number of repetitions; the Powerbb concentrates more on low-repetition works, especially in the basic exercises or 3 big lifts variants, always aiming at developing a good level of strength.

In complementary exercises, more than 10 repetitions per series can be performed and high-intensity works can be added. Other fundamental differences concern the periodization, for example, in the planning of the maximum: a BB does not necessarily need to test his 1RM, while for a powerbb it is a fundamental aspect for monitoring his training.

The structuring of the training of those practicing Powerbuilding is based on 3 training sessions per week. They try to work in multifrequency and repeat the 3 big lifts or their variants several times

(Dzhym, 2015; Ferland & Comtois, 2019; Napolitano et al, 2013; Tovstonoh, 2015; Vargas et al, 2019): Bench press: this is a little stressing exercise, so nothing prevents from doing it often, even during every workout. Squat: An exercise with a medium degree of difficulty, to be developed preferably twice a week. Deadlift: the most technically difficult Powerlift. We can only develop one lift a week. It needs to frame the variables on which to set the training methodology. Their determination leads us to include them in graph n. 1, to then subsequently define them specifically.

Graph 1. Training variables.



Source: Our Elaboration

Volume Number of training series. Load intensity. Percentage of load lifted. Perceived intensity. Yielding degree reached. Density Ratio between total tonnage and duration of the training session. Improving one of these abilities already leads to a hypertrophic adaptation. This is true when the training methodology (the parameters we will subsequently observe) impact on the three mechanisms of hypertrophic adaptation. Yet we will go back on this topic in another article. Let us now analyze each of these four variables to understand, more in detail, how it all works.

Training Variables Description

The first variable is the training volume. The Volume is nothing but the number of training series of our training week. When planning our training we will have to decide, for each muscular area, a specific number of series to perform (Abbott, 2016; Androulakis-Korakakis, 2018; Schoenfeld & Grgic, 2018; Tursi et al, 2013). The greater the series (within certain different ranges for each area), the greater the stimulus of adaptation that we are going to stimulate. To set a programming of the training volume we must gradually increase the number of training series for 1-2 areas at a time. It is not worthwhile increasing the series on all the muscles, the body will not be able to withstand too much volume, so we try to choose those areas we want to improve more (typically those less-trained ones). Normally it is preferable to add 1-2 training series in each week of programming. The latter will end when the volume we reach can no longer be withstood. In this case we will get to an overreaching or an overtraining, which can be easily observed through a drop in performance.

This state will send the body a signal of huge need for adaptation, which will ultimately lead to greater muscular hypertrophy. Load intensity is nothing but the load we are able to lift in a given number of repetitions. Therefore, for example, an athlete who lifts 100 kilos from the bench by performing 6 repetitions will have higher load intensity than an athlete who can only perform 4 repetitions with those 100 kilos but, in turn, this athlete will have higher load intensity than another one who, for 4 repetitions, will be able to lift only 80 kilos. There are several ways to program a mesocycle by focusing on load intensity as a variable. Generally, what we suggest is to choose an exercise on which to set a strength progression by employing Powerlifting methodologies. The rest of the session will have to be set in a functional way to this progression. The perceived intensity represents the average yielding degree of our training session.

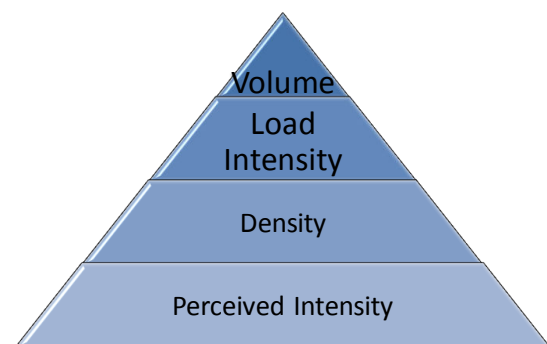
To program a progression on the perceived Intensity, what we have to do is set an average yielding degree of the session. From week to week we will then increase the yielding degree on some of the series of our programming. Normally, we start with an average RPE (Rate of Perceived Exertion) of 6/7 and, from there, we increase the yielding degree on 1-2 training series every week. The aim here is to achieve overreaching, normally identified by a sharp drop in performance. The training density is given by the ratio between the total tonnage and the duration of the training session. Training series x Load employed / Duration of the session. Finally, the density is related to the recovery times. The shorter the recovery times, the greater the density of the training. To progress on this variable what we can do is set a specific planning (i.e. exercises, series, repetitions and loads) and try, every week, to do it in less time than the previous week. The goal is to constantly search, in each of the variables, for a response that

modifies the muscle and makes it more hypertrophic, which is the intrinsic goal of Powerbuilding (Bishop, 2018; Bompa & Buzzichelli, 2015).

Training Variables Selection

When selecting the variables we define the terminology of absolute Impact and relative Impact. By the first term we generally indicate the effectiveness of a certain variable on hypertrophic adaptation. In absolute terms, in fact, each of the 4 Variables has a greater or lesser effect on muscular hypertrophy (Austin & Mann, 2018; Baker et al, 2008). This generates a real hierarchical relationship between them.

Graph 2. Impact, in absolute terms, of the different variables on the hypertrophic adaptations.



Source: Our Elaboration

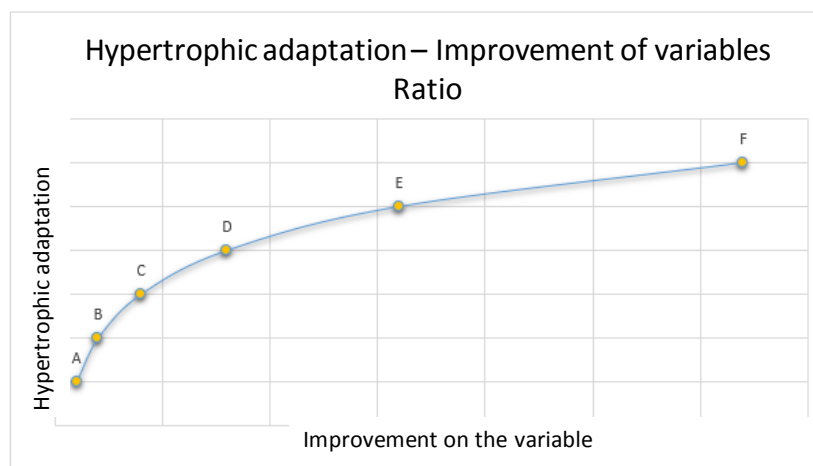
In graph n.2 it can be seen that the greater impact indicates the Volume. The concept according to which "the more we train, the more we get outcomes", in this sense, is correct, except for the fact of having to manage well and make every single series trainable. In terms of effectiveness, load intensity comes second. We have often spoken about the correlation between strength and hypertrophy, and that is why the saying "a stronger muscle is a bigger muscle" finds its *raison d'être*.

Density, instead, comes in third. Very dense training enormously sacrifices the load and the quality of the training series. In general, this ability does not have great impact in hypertrophic terms. Perceived intensity comes last; it is the ability to concentrate and reach high yielding degrees.

This should be no surprise too, since the exacerbation of muscle yielding is a typical Bodybuilding ability that deeply differentiates it from other weight lifting sports. This short analysis would seem to confirm the trend of recent years in bodybuilding training, i.e. that it is preferable with ever increasing training volumes, and that it is necessary to dedicate certain periods to strength training in order not to lose too much loads in terms of weight expressed by the balance wheel.

Look at graph 3 to learn more about the improvement of variables in relation to hypertrophic adaptation.

Graph 3. Hypertrophic Adaptation.



The graph shows the trend of the hypertrophic response according to the progression on a specific variable

Source: Our Elaboration

Imagine to be progressing on the Volume. We are able manage 15 training series and, in the first mesocycle, we get to manage 20 of them. The hypertrophic response will be excellent. Now, imagine we meet a few years later. We are now able to manage 35 training series and we dedicate a mesocycle to improve the volume, reaching up to 40 training series. The hypertrophic outcomes will be lower. How is it possible? Anyway, we have increased our ability to manage the Volume of 5 training series. Graph n.3 tries to describe it. In the first improvement (from 15 to 20) we were on the left side of the graph. In this area, a minimal improvement on the variable leads to a great hypertrophic response. In the second improvement (from 35 to 40) we are instead on the right side of the graph. In this area, the same improvement on the variable brings a low hypertrophic response. In other words, the stronger we are on a skill, the less a further improvement will lead to hypertrophic adaptations and the less convenient it will be to invest in it. The value given to a product varies according to our needs. The conclusion we come to is that, if we keep focusing on volume or load intensity, we will reach a standstill in the long run. The goal is to be able to find a midpoint between the ability for absolute and relative impact in the training planning (Bishop et al, 2018; Brechue & Abe, 2002; Król & Kmiecik, 2016).

Use of Variables in Training

The ability to choose the right variable is closely related to the individual's feedback. This is why it is appropriate to have feedback in terms of constant effort perceived. Therefore, let us examine the correlation of each of the variables with the others (Cleather, 2006; Joao et al, 2014; Kraemer, 2016; Tremblay & Proteau, 1998; Tykhorskyi et al, 2018; Vanderburgh & Batterham, 1999). Perceived Intensity is a variable that does not have a strong hypertrophic impact, but that allows extending that

of the other ones. In other words, if we work on the medium-intensity Volume we will get a specific outcome. Training with a higher perceived intensity allows getting greater outcomes. Density can bring benefits but has a counterproductive value, i.e. it sacrifices other variables. Reducing the recovery time too much prevents from lifting too much weight, withstanding high degrees of failure and managing dense sessions. Load intensity amplifies the effect of the other variables too. Working with higher loads with the same volume or yielding/recovery degree is certainly advantageous. However, this variable must be contextualized to the repetitions range we employ. In other words, if we usually work between 6 and 8 repetitions, we must work on strength in this specific work range. When we speak of Volume we must understand how qualitative this volume is. A very qualitative volume is a volume in which the series are considered trainable only if brought to a certain yielding degree, and if high loads are lifted. It is useless to work on this variable if there is the perception of the quality of the training series, and if this perception is obtained when performing a dynamic work on the load intensity and on the perceived intensity.

Conclusion

The final programming hypothesis of our periodization can be recognized through four phases. The first is defined as preparation phase, in which we work gradually on load intensity and perceived intensity, as well as on the mind-muscle connection. This means spending a few weeks to increase the loads again on a given repetitions range, raise the average yielding degree of our training sessions and establish an excellent mind-muscle connection by means of specific exercises. The second is defined as Blasting phase, i.e. once obtained a certain level of perceived intensity and load, then we will begin to increase the training

series. At this phase there will therefore be a progressive increase in volume, but this increase will be absolutely qualitative. In fact, we will have the maximum awareness of what the required intensity is and we will make sure to reach it in every single training series provided by our protocol. The third is defined as deloading phase. The deloading will take place for two reasons: the first is that the athlete yields in terms of performance, having reached his limit; he is no longer able to withstand such training and is in overreaching. In this case, it needs to give him time to fully recover and then start again with the same work. The second reason is that the athlete reaches high volumes. In this case, we will find ourselves on the right side of the graph on the relative impact, and it is not advisable to keep on pushing further. Let us rather try to deload, to start a preparation phase by reaching higher intensities and, from there, to go up again. This new blasting phase will be harder and we will try to achieve the overreaching before getting to too high volume levels. During the deloading phase, intensity and volume will simply be lower.

The last phase, in jargon, is defined as the cruise phase. This phase is possible and occurs when we see that our loads are too low, or when the response to the work done so far decreases.

In these cases it is advisable to dedicate a mesocycle to work on load intensity. What we do is develop a strength programming on some exercises (Fundamental Exercises), and set the rest of the session in a way that is functional and synergistic to the progression itself. In these contexts the perceived intensity will tend to be low, this will allow us recovering from the typical stressors of this variable. In this programming, the blasting phase concentrates only on 2-3 muscle areas at a time. In this way, we will maximize the stimulus of hypertrophic adaptation on areas that really need it, thus trying to improve the proportions and aesthetics of the subject. The theoretical planning of the four phases can allow for a methodological orientation to the practical development of the Powerbuilding activity, and provides the possibility of carrying out subsequent evaluation studies of the outcomes showed by the athletes.

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